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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,306	12/29/2003	Qinghua Li	ITL.1955US (P18462)	7983

47795 7590 11/26/2008
TROP, PRUNER & HU, P.C.
1616 S. VOSS RD., SITE 750
HOUSTON, TX 77057-2631

EXAMINER	
PATEL, JAY P	
ART UNIT	**PAPER NUMBER**
2419	
MAIL DATE	**DELIVERY MODE**
11/26/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/748,306	LI ET AL.	
	Examiner	**Art Unit**	
	JAY P. PATEL	2419	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on 10 July 2008.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) 1-41 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) 1-41 is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 13 is objected to because of the following informalities: The preamble should be changed to --A computer readable storage medium with computer readable instructions embedded thereon, the instructions when executed, cause an accessing communication device to implement a method including:--. Appropriate correction is required.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-2, 11-14, 21 23-26, 34-35, 37-39 and 41 are rejected under 35 U.S.C. 103(a) as being anticipated by Li (US Patent 7103115 B2) in view of Suzuki et al. (US Patent 7072409 B2).

3. In regards to claim 1, Li shows in figure 3, a packet format for an OFDM sub-band (generating a packet for transmission). Furthermore, figure 1 shows a block diagram of the OFDM system inclusive of transmission antennas 130 (transmission via a select first and second antenna(e) of a transmitting device).

4. Furthermore, the signal in figure 3 is inclusive of training symbols 320 (including with the generated packet at least one training symbol for the first antenna) and payload

symbols 330 (together with information related to a function other than training). Figure 5 is a block diagram of the training symbol generator 430 in figure 4; the controller 510 can command input/output interface 590 to provide N sets of training symbols relating to N separate transmit antennas.

5. In further regards to claim 1, although Li shows transmitting signals 135 from antenna(e) 130-1 through 130-N. Li fails to teach the transmission occurring sequentially. Suzuki however, teaches the above-mentioned limitation (see column 5, lines 28-35) where radio waves are radiated sequentially form the transmitting antenna elements TXA1 (see figures 1 and 3).

6. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the sequential transmission as taught by Suzuki into the transmission system of Li. The motivation to do so would be to properly reconstruct a transmitted signal in the event of a distorted direct path between a receiving and a transmitting antenna.

7. In regards to claim 2, the communication signal in figure 3 is inclusive of payload symbols 330 (a data packet).

8. In regards to claim 11, figure 1 shows a block diagram of the OFDM system inclusive of transmission antennas 130 which transmit the RF signals (such as the OFDM signal of figure 3) (see column 3, lines 14-26).

9. In regards to claim 12, figure 1 is also inclusive of receivers 150 (receive at least a packet from the remote device). Furthermore, training symbols 320, can be any set of

symbols suitable for training an equalizer (i.e. equalizer 160 of figure 1) (the packet is used as a training symbol) (see column 5, lines 51-55).

10. Furthermore, figure 6 is a block diagram of the equalizer 160 from figure 1. Channel estimator 620 can extract various sets of expected patterns of training symbols from a database to derive the correlations used to determine channel characteristics (perform one or more of training and calibration of one or more transmit chains based, at least in pare on channel performance information associated with the received training symbol(s)) (see column 10, lines 31-38).

11. In regards to claim 13, Li shows in figure 3, a packet format for an OFDM sub-band (generating a packet for transmission). Furthermore, figure 1 shows a block diagram of the OFDM system inclusive of transmission antennas 130 (transmission via a select first and second antenna(e) of a transmitting device).

12. Furthermore, the signal in figure 3 is inclusive of training symbols 320 (including with the generated packet at least one training symbol for the first antenna) and payload symbols 330 (together with information related to a function other than training). Figure 5 is a block diagram of the training symbol generator 430 in figure 4; the controller 510 can command input/output interface 590 to provide N sets of training symbols relating to N separate transmit antennas.

13. In further regards to claim 13, although Li shows transmitting signals 135 from antenna(e) 130-1 through 130-N. Li fails to teach the transmission occurring sequentially. Suzuki however, teaches the above-mentioned limitation (see column 5,

lines 28-35) where radio waves are radiated sequentially form the transmitting antenna elements TXA1 (see figures 1 and 3).

14. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the sequential transmission as taught by Suzuki into the transmission system of Li. The motivation to do so would be to properly reconstruct a transmitted signal in the event of a distorted direct path between a receiving and a transmitting antenna.

15. In regards to claim 14, the communication signal in figure 3 is inclusive of payload symbols 330 (a data packet).

16. In regards to claim 21, figure 1 is inclusive of transmission antennas 130.

17. In regards to claim 23, figure 1 shows a block diagram of the OFDM system inclusive of transmission antennas 130 which transmit the RF signals (such as the OFDM signal of figure 3) (see column 3, lines 14-26).

18. In regards to claim 24, figure 1 is also inclusive of receivers 150 (receive at least a packet from the remote device). Furthermore, training symbols 320, can be any set of symbols suitable for training an equalizer (i.e. equalizer 160 of figure 1) (the packet is used as a training symbol) (see column 5, lines 51-55).

19. Furthermore, figure 6 is a block diagram of the equalizer 160 from figure 1. Channel estimator 620 can extract various sets of expected patterns of training symbols from a database to derive the correlations used to determine channel characteristics (perform one or more of training and calibration of one or more transmit

chains based, at least in pare on channel performance information associated with the received training symbol(s)) (see column 10, lines 31-38).

20. In regards to claim 25, Li shows in figure 3, a packet format for an OFDM sub-band (generating a packet for transmission). Furthermore, figure 1 shows a block diagram of the OFDM system inclusive of transmission antennas 130 (transmission via a select first and second antenna(e) of a transmitting device).

21. Furthermore, the signal in figure 3 is inclusive of training symbols 320 (including with the generated packet at least one training symbol for the first antenna) and payload symbols 330 (together with information related to a function other than training). Figure 5 is a block diagram of the training symbol generator 430 in figure 4; the controller 510 can command input/output interface 590 to provide N sets of training symbols relating to N separate transmit antennas.

22. In further regards to claim 25, although Li shows transmitting signals 135 from antenna(e) 130-1 through 130-N. Li fails to teach the transmission occurring sequentially. Suzuki however, teaches the above-mentioned limitation (see column 5, lines 28-35) where radio waves are radiated sequentially form the transmitting antenna elements TXA1 (see figures 1 and 3).

23. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the sequential transmission as taught by Suzuki into the transmission system of Li. The motivation to do so would be to properly reconstruct a transmitted signal in the event of a distorted direct path between a receiving and a transmitting antenna.

24. In regards to claim 26, the communication signal in figure 3 is inclusive of payload symbols 330 (a data packet).

25. In regards to claim 34, figure 1 is inclusive of transmitters 120 between an encoder 110 and transmit antenna(e) 130.

26. In regards to claim 35, figure 1 is also inclusive of receivers 150 between antenna(e) 140 and equalizer 160.

27. In regards to claim 37, Li shows in figure 3, a packet format for an OFDM sub-band (generating a packet for transmission). Furthermore, figure 1 shows a block diagram of the OFDM system inclusive of transmission antennas 130 (transmission via a select first and second antenna(e) of a transmitting device).

28. Furthermore, the signal in figure 3 is inclusive of training symbols 320 (including with the generated packet at least one training symbol for the first antenna) and payload symbols 330 (together with information related to a function other than training). Figure 5 is a block diagram of the training symbol generator 430 in figure 4; the controller 510 can command input/output interface 590 to provide N sets of training symbols relating to N separate transmit antennas.

29. In further regards to claim 37, although Li shows transmitting signals 135 from antenna(e) 130-1 through 130-N. Li fails to teach the transmission occurring sequentially. Suzuki however, teaches the above-mentioned limitation (see column 5, lines 28-35) where radio waves are radiated sequentially form the transmitting antenna elements TXA1 (see figures 1 and 3).

30. Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to incorporate the sequential transmission as taught by Suzuki into the transmission system of Li. The motivation to do so would be to properly reconstruct a transmitted signal in the event of a distorted direct path between a receiving and a transmitting antenna.

31. In regards to claim 38, the communication signal in figure 3 is inclusive of payload symbols 330 (a data packet).

32. In regards to claim 39, figure 1 is inclusive of transmitters 120 between an encoder 110 and transmit antenna(e) 130.

33. In regards to claim 41, figure 1 is also inclusive of receivers 150 between antenna(e) 140 and equalizer 160.

34. Claims 3-4, 9, 15-16, 27-28 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent 7103115 B2), in view of Suzuki et al. (US Patent 7072409 B2) further in view of Hammerschmidt (US Publication 2004/0151146 A1).

35. In regards to claim 3, Li in combination with Suzuki teaches all the limitations of parent claims 1 and 2 as stated above. Li and Suzuki fail to teach a RTS or a CTS packet inclusive of training symbols.

36. Hammerschmidt however, teaches the above-mentioned limitation. Hammerschmidt discloses with regards to prior art figure 1 that training symbols may be inserted in preambles of OFDM packets (see paragraph 9) and in with regards to figure 13 shows channel reservation using OFDM service packets RTS and CTS.

37. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

38. In regards to claim 4, Li in combination with Suzuki and Hammerschmidt teaches all the limitations of parent claims 1, 2 and 3. Li however fails to teach transmitting the CTS or RTS packet via at one of the selected antenna. Hammerschmidt however teaches that training symbols may be inserted in preambles of OFDM packets (see paragraph 9). Therefore, since the packet is received with training symbols in the preamble, Hammerschmidt also reads on the packet being transmitted via the same antenna 124.

39. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

40. In regards to claim 9, Li in combination with Suzuki and Hammerschmidt teaches all the limitations of parent claims 1, 2 and 3. Li however fails to teach transmitting the CTS or RTS packet inclusive of the training symbols via at one of the selected antenna. Hammerschmidt however teaches that training symbols may be inserted in preambles of OFDM packets (see paragraph 9). Therefore, since the packet is received with training symbols in the preamble, Hammerschmidt also reads on the packet being transmitted via the same antenna 124.

41. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

42. In regards to claim 15, Li in combination with Suzuki teaches all the limitations of parent claims 13 and 14 as stated above. Li and Suzuki fail to teach a RTS or a CTS packet inclusive of training symbols.

43. Hammerschmidt however, teaches the above-mentioned limitation. Hammerschmidt discloses with regards to prior art figure 1 that training symbols may be inserted in preambles of OFDM packets (see paragraph 9) and in with regards to figure 13 shows channel reservation using OFDM service packets RTS and CTS.

44. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

45. In regards to claim 16, Li in combination with Suzuki and Hammerschmidt teaches all the limitations of parent claims 13, 14 and 15. Li however fails to teach transmitting the CTS or RTS packet via at one of the selected antenna. Hammerschmidt however teaches that training symbols may be inserted in preambles of OFDM packets (see paragraph 9). Therefore, since the packet is received with training symbols in the preamble, Hammerschmidt also reads on the packet being transmitted via the same antenna 124.

46. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

47. In regards to claim 27, Li in combination with Suzuki teaches all the limitations of parent claims 25 and 26 as stated above. Li and Suzuki fail to teach a RTS or a CTS packet inclusive of training symbols.

48. Hammerschmidt however, teaches the above-mentioned limitation. Hammerschmidt discloses with regards to prior art figure 1 that training symbols may be inserted in preambles of OFDM packets (see paragraph 9) and in with regards to figure 13 shows channel reservation using OFDM service packets RTS and CTS.

49. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

50. In regards to claim 28, Li in combination with Suzuki and Hammerschmidt teaches all the limitations of parent claims 25, 26 and 27. Li however fails to teach transmitting the CTS or RTS packet via at one of the selected antenna. Hammerschmidt however teaches that training symbols may be inserted in preambles of OFDM packets (see paragraph 9). Therefore, since the packet is received with training symbols in the preamble, Hammerschmidt also reads on the packet being transmitted via the same antenna 124.

51. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

52. In regards to claim 36, Li in combination with Suzuki teaches all the limitations of parent claims 25-26 and 35. Li and Suzuki however, fail to teach using the same antennas for both transmission and reception.

53. Hammerschmidt however shows the above-mentioned limitation in prior art figure 1 where antenna 124 can be used for reception or transmission via the use of a switch 126.

54. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use an OFDM service packet such as a RTS and CTS with preamble inclusive of training symbols as disclosed by Hammerschmidt in the transmission systems taught by Li and Suzuki. The motivation to do so would be to derive channel state information for OFDM sub-channels and use the channel state information to process the OFDM packets received via the antennas (see Hammerschmidt, paragraph 11).

55. Claim 22, 29-32 and 40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent 7103115 B2), in view of Suzuki et al. (US Patent 7072409 B2) further in view of Weber et al. (US Patent 7212788 B2).

56. In regards to claim 22, Li in combination with Suzuki teaches all the limitations of parent claims 13-14 and 21. Li and Suzuki however fail to particularly teach providing comparing a performance metric at a receiver to select the best transmit antenna, where the performance metric is SNR. Weber on the other hand, teaches the above-mentioned limitations

Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna (providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46). The antenna with the least number of errors or the highest SNR is selected for broadcast (selecting the antenna with the best performance metric at the receiver, where the performance metric is SNR) (see column 1, lines 46-47).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the transmission systems taught by Li and Suzuki. The motivation to do so would be to allow for selection of an antenna with the best performance.

57. In regards to claims 29-31, Li in combination with Suzuki teaches all the limitations of parent claims 25-26. Li and Suzuki however fail to particularly teach

providing comparing a performance metric at a receiver to select the best transmit antenna, where the performance metric is SNR. Weber on the other hand, teaches the above-mentioned limitations

In regards to claims 29-31, Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna (providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46). The antenna with the least number of errors or the highest SNR is selected for broadcast (selecting the antenna with the best performance metric at the receiver, where the performance metric is SNR) (see column 1, lines 46-47).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the transmission systems taught by Li and Suzuki. The motivation to do so would be to allow for selection of an antenna with the best performance.

In regards to claim 32, figure 1 in Li is inclusive of transmit antennas 130.

58. In regards to claim 40, Li in combination with Suzuki teaches all the limitations of parent claims 37-39. Li and Suzuki however fail to particularly teach providing comparing a performance metric at a receiver to select the best transmit antenna, where the performance metric is SNR. Weber on the other hand, teaches the above-mentioned limitations

In regards to claim 40, Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna (providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46). The antenna with the least number of errors or the highest SNR is selected for broadcast (selecting the antenna with the best performance metric at the receiver, where the performance metric is SNR) (see column 1, lines 46-47).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the transmission systems taught by Li and Suzuki. The motivation to do so would be to allow for selection of an antenna with the best performance.

59. Claims 5-7, 10 and 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent 7103115 B2), in view of Suzuki et al. (US Patent 7072409 B2) in view of Hammerschmidt (US Publication 2004/0151146 A1) further in view of Weber et al. (US Patent 7212788 B2).

60. In regards to claims 5-7 and 10, Li in combination with Suzuki and Hammerschmidt teaches all the limitations of parent claims 1-4 and 9. Neither Li nor Hmmerschmidt however particularly teach providing comparing a performance metric at a receiver to select the best transmit antenna, where the performance metric is SNR. Weber on the other hand, teaches the above-mentioned limitations

In regards to claims 5-6 and 10, Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna (providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46). The antenna with the least number of errors or the highest SNR is selected for broadcast (selecting the antenna with the best performance metric at the receiver, where the performance metric is SNR) (see column 1, lines 46-47).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the transmission systems taught by Li, Suzuki and Hammerschmidt. The motivation to do so would be to allow for selection of an antenna with the best performance.

In regards to claim 7, figure 1 in Li is inclusive of transmit antennas 130.

In regards to claim 17, Li in combination with Suzuki and Hammerschmidt teaches all the limitations of parent claims 13-16. Neither Li nor Hmmerschmidt however particularly teach providing comparing a performance metric at a receiver to select the best transmit antenna.

In regards to claim 17, Weber teaches in prior art figure 1, a baseband/mixer unit 140 that includes processing for comparing the number of packet errors/SNR for each of antenna (providing a performance metric at a receiver when compared against other transmit antenna options) (see column 1, lines 42-46).

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to incorporate the selection of a transmit antenna based on the received SNR at taught by Weber in the transmission systems taught by Li, Suzuki and Hammerschmidt. The motivation to do so would be to allow for selection of an antenna with the best performance.

In regards to claim 18, figure 1 in Li is inclusive of transmit antennas 130.

61. Claims 8, 19-20 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent 7103115 B2), in view of Suzuki et al. (US Patent 7072409 B2) in view of Hammerschmidt (US Publication 2004/0151146 A1) further in view of Weber et al. (US Patent 7212788 B2) further in view of Corbett et. al (US Patent 7239894 B2).

62. In regards to claim 8, Li in combination with Suzuki, Hammerschmidt and Weber teaches all the limitations of the parent claims. Neither of the above-mentioned references however teaches the concept of using a separate subset of transmission antennas for the handshaking and the data packets.

Corbett however teaches the above-mentioned concept with respect to omni-directional antenna 203 and directional antenna 204. Omni-directional antenna 203 can be used to receive a data notification signal indicating that a wireless device has data to send (RTS). The control module 205, then causes a directional beam of directional antenna 204 to be directed towards the location of the wireless device (see column 8, lines 49-64). The control module 205 can also cause antenna 203 to transmit a location

request. Thus two different antennas are used to receive/transmit control information and payload information separately.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the concept of using two different antennas to transmit control and data information as taught by Corbett with the selection of a transmit antenna based on the received SNR as taught by Weber in the transmission systems taught by Li, Suzuki and Hammerschmidt. The motivation to do so would be to detect signal strength associated with the received communication.

63. In regards to claim 19, Li in combination with Suzuki, Hammerschmidt and Weber teaches all the limitations of the parent claims. Neither of the above-mentioned references however teach the concept of using a separate subset of transmission antennas for the handshaking and the data packets.

Corbett however teaches the above-mentioned concept with respect to omni-directional antenna 203 and directional antenna 204. Omni-directional antenna 203 can be used to receive a data notification signal indicating that a wireless device has data to send (RTS). The control module 205, then causes a directional beam of directional antenna 204 to be directed towards the location of the wireless device (see column 8, lines 49-64). The control module 205 can also cause antenna 203 to transmit a location request. Thus two different antennas are used to receive/transmit control information and payload information separately.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the concept of using two different antennas

to transmit control and data information as taught by Corbett with the selection of a transmit antenna based on the received SNR as taught by Weber in the transmission systems taught by Li, Suzuki and Hammerschmidt. The motivation to do so would be to detect signal strength associated with the received communication.

In regards to claim 20, figure 1 in Li is inclusive of transmit antennas 130.

64. Claim 33 is rejected under 35 U.S.C. 103(a) as being unpatentable over Li (US Patent 7103115 B2) in view of Suzuki et al. (US Patent 7072409 B2), in view of Weber et al. (US Patent 7212788 B2) further in view of Corbett et. al (US Patent 7239894 B2).

65. In regards to claim 33, Li in combination with Suzuki and Weber teaches all the limitations of the parent claims. Neither of the above-mentioned references however teach the concept of using a separate subset of transmission antennas for the handshaking and the data packets.

Corbett however teaches the above-mentioned concept with respect to omni-directional antenna 203 and directional antenna 204. Omni-directional antenna 203 can be used to receive a data notification signal indicating that a wireless device has data to send (RTS). The control module 205, then causes a directional beam of directional antenna 204 to be directed towards the location of the wireless device (see column 8, lines 49-64). The control module 205 can also cause antenna 203 to transmit a location request. Thus two different antennas are used to receive/transmit control information and payload information separately.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the concept of using two different antennas to transmit control and data information as taught by Corbett with the selection of a transmit antenna based on the received SNR as taught by Weber in the transmission systems taught by Li and the teachings of Suzuki and Weber. The motivation to do so would be to detect signal strength associated with the received communication.

Response to Arguments

66. Applicant's arguments with respect to the Walton reference have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

67. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JAY P. PATEL whose telephone number is (571)272-3086. The examiner can normally be reached on M-F 9:00 am - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edan Orgad can be reached on (571) 272-7884. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jay P. Patel
Examiner
Art Unit 2419

/Edan Orgad/

Supervisory Patent Examiner, Art Unit 2619